ANBCA

Analytical Biochemistry

An International Journal

EDITOR: *Alvin Nason*

ADVISORY BOARD:

Gary Ackers
Norman G. Anderson
Eraldo Antonini
Gilbert Ashwell
H. A. Barker
Samuel P. Bessman
Simon Black
Robert M. Bock
Robert L. Bowman
Ludwig Brand
A. E. Braunstein
Robert H. Burris
Melvin Calvin
Andreas Chrambach
Frank Eisenberg, Jr.
Jacques R. Fresco
Victor Ginsburg
I. C. Gunsalus
Harlyn O. Halvorson
Osamu Hayaishi
Edward C. Heath
Leslie Hellerman
C. H. W. Hirs
Evan C. Horning
Rollin D. Hotchkiss
Walter L. Hughes
William B. Jakoby
Nathan O. Kaplan
Ephraim Katchalski
Irving Klotz
Luis F. Leloir
Oliver H. Lowry
Feodor Lynen
Brian J. McCarthy
Donald McCormick
William D. McElroy
Vincent Massey
Alan H. Mehler
Bruce Merrifield
Marshall Nirenberg
Kazuo Okunuki
Sarah Ratner
Alexander Rich
David Rodbard
Gerhard Schmidt
Michael Sela
Esmond E. Snell
Herbert A. Sober
Sol Spiegelman
Paul K. Stumpf
Charles A. Thomas, Jr.
Sidney Udenfriend
Bert L. Vallee
Samuel B. Weiss
Theodor Wieland
George Wolf
W. A. Wood
Lemuel D. Wright
David A. Yphantis

VOLUME 62

1974

ACADEMIC PRESS

New York and London

A Subsidiary of Harcourt Brace Jovanovich, Publishers

Copyright © 1974 by Academic Press, Inc.

All Rights Reserved

No part of this publication may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

CONTENTS OF VOLUME 62

Number 1, November 1974

Edward Grant Kar and Kirk C. Aune. Analyses of Sedimentation Equilibrium Data 1

Allan W. Rees, Edwin A. Lewis, and Michael S. DeBuysere. Rapid Alignment of Schlieren and Interference Optics in the Analytical Ultracentrifuge 19

T. William Houk, Jr. and Kathleen Ue. The Measurement of Actin Concentration in Solution: A Comparison of Methods . 66

Patricia Kent, S. C. Bunce, R. A. Bailey, D. A. Aikens, and Charles Hurwitz. Interference by Polyamines in the Measurement of Magnesium Ion at Physiological pH with the Divalent Cation-Selective Electrode 75

Donald A. Ferguson, Jr., John W. Boyd, and Arthur W. Phillips. Continuous Assays of L-Asparaginase by Coupling with Glutamic Dehydrogenase and by Cationic Glass Electrode . . . 81

M. W. Gray. A Method for the Quantitative Analysis and Preparative Isolation of *N*-[*N*-Methyl-*N*-(9-β-D-Ribofuranosylpurin-6-yl)carbomoyl]threonine—A Modified Nucleoside Present in Transfer RNA 91

Robert H. Lawrence, Jr., George R. Waller, and Keith F. Kinneberg. An Improved Method of Sample Introduction in Gas Chromatography–Mass Spectrometry of Biological Materials . 102

K. Jayarama Shetty and M. S. Narasinga Rao. Studies on Groundnut Proteins. III. Physicochemical Properties of Arachin Prepared by Different Methods 108

Marcel Lalanne and Frank Henderson. Determination of 5-Phosphoribosyl 1-Pyrophosphate in Mouse Liver 121

Jiwhey Chung and Angelo M. Scanu. Continuous pH-Stat Titration Method for the Assay of Lipoprotein Lipase Activity *in Vitro* 134

Kim Ping Wong. A New Method for Measuring Sulfotransferase . 149

David A. Cooney, H. N. Jayaram, Elton R. Homan, and Charles F. Motley. A Facile Radiometric Technique for Measuring ATP 157

Matilde Salinas, Juan L. Fando, and Santiago Grisolia. A Sensitive and Specific Method for Quantitative Estimation of Carbamylation in Proteins 166

Albert Leyva, Jr. and William N. Kelly. Measurement of DNA in Cultured Human Cells 173

Allen S. Otsuka and Paul A. Price. Removal of Proteases from

DNase I by Chromatography over Agarose with Covalently Attached Lima Bean Protease Inhibitor 180
J. J. Myher, L. Marai, and A. Kuksis. Identification of Fatty Acids by GC–MS using Polar Siloxane Liquid Phases . . . 188
R. C. Warrington. A General Method for the Direct Isolation of the 3′-Terminal Fragments Derived from Transfer RNA Molecules 204
John J. Monahan and Ross H. Hall. Fractionation of L-Cell Chromatin into DNA, RNA, and Protein Fractions on Cs_2SO_4 Equilibrium Density Gradients 217
Robert Rej and Arthur H. Richards. Interference by Tris Buffer in the Estimation of Protein by the Lowry Procedure . . . 240
Tong Hyub Joh, Robert A. Ross, and Donald J. Reis. A Simple and Sensitive Assay for Dopamine-β-Hydroxylase 248
Kenneth H. Falchuck, Merle Evenson, and Bert L. Vallee. A Multichannel Atomic Absorption Instrument: Simultaneous Analysis of Zinc, Copper, and Cadmium in Biologic Materials 255
D. J. Newton, J. E. Scott, and P. Whiteman. The Estimation of Acid Glycosaminoglycan–Alcian Blue Complexes Eluted from Electrophoretic Strips 268
John I. Peterson, Harold W. Tipton, and Andreas Chrambach. A Gel Slicer for the Transverse Sectioning of Cyclindrical Polyacrylamide Gels 274
B. E. Tilley, M. Izaddoost, J. M. Talent, and R. W. Gracy. Recovery and Analysis of Peptides from Thin Layer Cellulose . 281
E. Rachel Hall and P. David J. Weitzman. A Continuous Spectrophotometric Assay for the Transacylase (E2) Component of Pyruvate and α-Oxoglutarate Dehydrogenase Enzyme Complexes 286
Bryce V. Plapp and Jack C. Kim. Determination of ϵ-Acetimidyllysine in Proteins 291
John L. Meyer. Formation Constants for Interaction of Citrate with Calcium and Magnesium Ions 295

Short Communications

A. Levi, D. Mercanti, P. Calissano, and S. Alemà. Anomalous Behaviour of EDTA during Gel Filtration. Studies on the Possible Contamination of the S100 Protein . . . 301
R. D. Greenland, W. Roth, T. Gieske, and I. A. Michaelson. Ninhydrin Reactive Contaminants from Dowex-50 Cation Exchange Resins 305
J. H. Bradbury, M. W. Crompton, and Brian Warren. Determination of the Sequence of Peptides by PMR Spectroscopy 310

E. M. Southern. An Improved Method for Transferring Nucleotides from Electrophoresis Strips to Thin Layers of Ion-Exchange Cellulose 317
Addenda 319
Erratum 320

Number 2, December 1974

Francis C. H. Yeh and Eliyahu Scheinberg. Electrophoretic Separation of Enzymes of Individual Flour Beetles, *Tribolium castaneum*, on Polyacrylamide Gel 321
Bo G. Danielson and P. Åke Öberg. An Integrating Atomic Absorption Spectrophotometer for Ultramicroanalysis of Metals 327
M. Raafat El-Gewely and Hugh Tyson. Isolation and Characterisation of RNA from Flex (*Linum usitatissimum* L.) . . 341
D. J. Stewart. Sensitive Automated Methods for Phosphate and $(Na^+ + K^+)$-ATPase 349
S. Ghosh and D. B. Moss. Electroendosmosis Correction for Electrophoretic Mobility Determined in Gels 365
L. A. Lyublinskaya, S. V. Belyaev, A. Ya. Strongin, L. F. Matyash, E. D. Levin, and V. M. Stepanov. A New Chromogenic Substrate for Subtilisin 371
R. Liedtke and K. O. Mosebach. An Apparatus for Density Gradient Forming and Nonpuncturing Fractionation 377
Amnon Hizi and Gad Yagil. The Use of Anti-Immunoglobulin for the Immunoprecipitation of Labeled Proteins from Tissue Homogenates 386
Peter Sherline, Cynthia K. Bodwin, and David M. Kipnis. A New Colchicine Binding Assay for Tubulin 400
Tsan Z. Liu, Chung H. Wong, and Stephen B. Shohet. A Rapid and Simple Radioassay for Thymine 7-Hydroxylase . . . 408
Michel A. Delaage, Bernard N. Bellon, and Hélène L. Cailla. Rapid Assays for Adenylate Cyclase and 3′,5′ Cyclic AMP Phosphodiesterase Activities. Simultaneous Measurements of Other Pathways of ATP Catabolism 417
Shigebumi Hashimoto. A New Spectrophotometric Assay Method of Xanthine Oxidase in Crude Tissue Homogenate 426
Hiromi Morimoto, P. A. Ferchmin, and Edward L. Bennett. Spectrophotometric Analysis of RNA and DNA Cetyltrimethylammonium Bromide 436
Dulce Veloso and Richard L. Veech. Stoichiometric Hydrolysis of Long Chain Acyl-CoA and Measurement of the CoA Formed with an Enzymatic Cycling Method 449

Otto Vogel and Horst Reinmuth. A Modified Preparative Gel Electrophoresis Apparatus with Special Application to the Separation of Long Polypeptide Chains 461
Emilio J. Marco and Roberto Marco. The Use of 3-Acetyl-Pyridine Adenine Dinucleotide in the Spectrophotometric Assay of Enzymatic Activities Coupled to Dehydrogenases of Unfavorable Equilibrium 472
Robert M. Silverstein. The Assay of the Bromelains using N^a-CBZ-L-Lysine *p*-Nitrophenyl Ester and *N*-CBZ-Glycine *p*-Nitrophenyl Ester as Substrates 478
Fritz Brawand and Paul Walter. Molecular Sieve Filtration: A Method for Separate Measurement of Intra- and Extramitochondrial Adenine Nucleotides 485
C. Reiss and F. Michel. An Apparatus for Studying the Thermal Transition of Nucleic Acids at High Resolution 499
T. Wood. A Spectrophotometric Procedure for Following the D-Ribulose 5-Phosphate 3-Epimerase Reaction in the Direction of Ribulose 5-Phosphate Formation 509
M. Töpert, I. Zabel, and M. Ziegler. Thin Layer Gel Filtration as a Method for Routine Steroid Receptor Binding Studies . 514
E. G. Richards and J. H. Richards. Light-Difference Detector for Reading Rayleigh Fringe Patterns from the Ultracentrifuge . 523
Anne H. Datko, S. Harvey Mudd, and John Giovanelli. A Sensitive and Specific Assay for Cystathionine: Cystanthionine Content of Several Plant Tissues 531
Hiroshi Yamazaki, Knowlton Potter, and Gillian Chaloner-Larsson. *In vivo* Preparation of [^{32}P] Adenosine 3′,5′-Cyclic Monophosphate 546
Dohn G. Glitz, Duane C. Eichler, and Leo Angel. On the Use of Polyacrylamide Gel Electrophoresis in the Analysis of the Action of Free and Insolubilized Nucleases on Bacteriophage RNA 552
Robert L. Procaccini, Kurt Bürki, and Edward Bresnick. Protection of Histones Isolated from Elastase-Treated Mouse Epidermis 568
G. Volckaert and W. Fiers. A Simple and Highly Sensitive Method for Sequence Determination of ^{32}P-Labeled Oligonucleotides 573

Short Communications

D. Gr. Constantinescu and Elena Hatieganu. Metachromasi Through Uranyl Ions: A Procedure for Identifying the Nucleic Acids and the Nucleotides 584
Barry L. Taylor and Merton F. Utter. The Removal of

Nucleic Acids from Microbial Extracts by Precipitation with Lysozyme 588
Eric A. Stone and Sheldon Mendlinger. Separation of Conjugated Glycol Metabolities of [^{3}H]Norepinephrine in the Rat Brain 592
J. Dijkhof and C. Poort. A Rapid Method for the Detection of Trypsinogen and Chymotrypsinogen After Electrophoretic Separation of Pancreas Extract on Polyacrylamide Gel 598
Z. L. Awdeh and S. Abu-Samra. A New Method for the Concentration of Micro Protein Samples 601
R. S. Morrod and S. P. Spragg. Preconstruction of Density Gradients in Cells of the Analytical Ultracentrifuge . . 604
Steven M. Hassur and H. W. Whitlock, Jr. Direct-Contact Photography—A Convenient and Versatile Technique for the Cameraless Photography of Polyacrylamide Gels . 609
H. Faulstich and H. Trischmann. Mono- and Bideuterated L-Phenylalanines 615

Author Index 618

Cumulative Subject Index (Vols. 57–62) 621